



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/614,347 | 07/08/2003 | Gregory A. Becker | VYAN001/01US | 7831 |

7590 02/16/2006
Balaji Narashimban
MENDOCINO SOFTWARE
4700 Benicia Street
Freemont, CA 94538

EXAMINER

PHAM, KHANH B

ART UNIT PAPER NUMBER

2166

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/614,347

Applicant(s)

BECKER ET AL.

Examiner

Khanh B. Pham

Art Unit

2166

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 16-19 and 21-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 20 is/are rejected.
- 7) ☒ Claim(s) 4, 8 and 15 is/are objected to.
- 8) ☒ Claim(s) 16-19 and 21-25 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/9/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-15 and 20, drawn to method for maintaining a backup storage system, classified in class 707, subclass 204.
 - II. Claims 16-19 and 21-25, drawn to method for controlling data access in a backup system, classified in class 711, subclass 162.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination does not require estimate transaction location nor logical volume management. The subcombination has separate utility such as identifying a transaction associated with estimated transaction location or managing data using logical volume.

Art Unit: 2166

3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Ms. Stefanie Zilka, applicant's representative, on February 7, 2006, a provisional election was made without traverse to prosecute the invention of Group I, claims 1-15 and 20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-19 and 21-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

7. **Claim 13** is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The limitation recited in claim 13 is already included in independent claim 1.

8. **Claims 4, 8, 15** are objected to because of the following informalities:

- **Claim 4** recites "the association" at line 3. There is insufficient antecedent basis for this limitation in the claim.
- **Claim 8** recites the limitation "the plurality of data" in line 3. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination, the Examiner presume the limitation should read "the plurality of data **writes**" as recited in independent claim 1.
- **Claim 15** recite "said updating the backup storage system so that the data on the storage system at the **first time** is the same as the data on the backup storage system at the **first time**". There is insufficient antecedent basis for this limitation in the claim. For purposes of examination, the Examiner presumes the limitation should read: "said updating the backup storage system so that the data on the

Art Unit: 2166

storage system at the **second time** is the same as the data on the backup

storage system at the **second time**” as recited in claim 14.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. **Claims 1-15, 20** are rejected under 35 U.S.C. 102(e) as being anticipated by Goldstein et al. (US 6,665,815 B1), hereinafter “**Goldstein**”.

As per claim 1, Goldstein teaches a method for maintaining a backup storage system for a data storage system comprising:

- “receiving a plurality of data writes from an application program, the plurality of data writes occurring between a first time and a second time” at Col. 5 lines 44-48 and Fig. 3;
- “determining a backward increment between data on the data storage system at the second time and data on the data storage system at the first time based on

the plurality of data writes from the application program to the data storage system” at Col. 6 lines 6-60 and Fig. 7;

- “storing the backward increment” at Col. 6 lines 6-31;
- “storing the plurality of data writes” at Col. 6 lines 6-31;
- “and updating the backup storage system so that the data on the data storage system at the second time is the same as the data on the backup storage system at the second time” at Col. 6 lines 6-31.

As per claim 2, Goldstein teaches the method of claim 1, further comprising: “determining a forward increment between the data on the data storage system at the first time and the data on the data storage system at the second time based on the plurality of data writes” at Col. 4 lines 1-50 and Figs. 4, 6.

As per claim 3, Goldstein teaches the method of claim 2, further comprising: “associating the backward increment with the forward increment” at Col. 8 lines 65-67.

As per claim 4, Goldstein teaches the method of claim 2, further comprising: “storing the forward increment; and storing the association of the backward increment and the forward increment” at Col. 9 lines 1-8.

As per claim 5, Goldstein teaches the method of claim 1, further comprising: “storing indicia of the plurality of data writes” at Col. 4 lines 11-40.

As per claim 6, Goldstein teaches the method of claim 1, wherein “said updating the backup storage system comprises: applying each of the plurality of data writes to an image of data on the backup storage system, thereby recreating the data on the data storage system at the second time” at Col. 6 lines 6-31 and Figs. 7-11.

As per claim 7, Goldstein teaches the method of claim 6, “said applying each of the plurality of data writes comprising: updating the image of the data stored on the backup storage system with the plurality of data writes” at Col. 6 lines 6-31 and Figs. 7-11.

As per claim 8, Goldstein teaches the method of claim 1, wherein “said updating the backup storage system comprises: optimally applying the plurality of data **writes** to the backup storage system, thereby recreating the data on the data storage system at the second time” Col. 6 lines 6-31 and Figs. 7-11.

As per claim 9, Goldstein teaches the method of claim 1, wherein “a difference between the first time and the second time is a predetermined time period” at Col. 3 lines 55-67.

As per claim 10, Goldstein teaches the method of claim 1, wherein “a difference between the first time and the second time is a variable time period” at Col. 3 lines 55-67.

As per claim 11, Goldstein teaches the method of claim 10, wherein “a difference between the first time and the second time is dependent on the rate of the plurality of data writes” at Col. 3 lines 55-67.

As per claim 12, Goldstein teaches the method of claim 7, wherein “a difference between the first time and the second time is dependent on a quantity of the plurality of data writes” at Col. 3 lines 55-67.

As per claim 13, Goldstein teaches the method of claim 1, further comprising: “updating the backup storage system so that the data on the data storage system at the second time is the same as the data on the backup storage system at the second time” at Col. 6 lines 6-31.

As per claim 14, Goldstein teaches the method of claim 13, wherein “said updating the backup storage system so that the data on the data storage system at the second time is the same as the data on the backup storage system at the second time includes applying the backward increment to an image of data on the backup storage system, thereby recreating the data on the data storage system at the second time” at Col. 6 lines 6-31.

As per claim 15, Goldstein teaches the method of claim 14, wherein “said updating the backup storage system so that the data on the data storage system at the first time is the same as the data on the backup storage system at the first time includes applying an individual data write to the image of data on the backup storage system, thereby recreating the data on the data storage system at a point in time between the first time and the second time” Col. 6 lines 6-31 and Figs. 7-11.

As per claim 20, Goldstein teaches the method for using a backup storage system for a data storage system comprising:

- “receiving a plurality of data writes captured between an application and the data storage system, the plurality of data writes occurring between a first time and a second time” at Col. 5 lines 44-48 and Fig. 3;
- “identifying data blocks in the data storage system that were changed based on the plurality of data writes” at Col. 5 lines 23-48;
- “applying the plurality of data writes to an image on the backup storage system” at Col. 6 lines 6-31;
- “determining a forward increment between data on the data storage system at the first time and data on the data storage system at the second time based on the plurality of data writes” at Col. 3 line 55 to Col. 4 line 50 and Figs. 4, 6;
- “determining a backward increment between data on the data storage system at the second time and data on the data storage system at the first time based on a plurality of data writes” at Col. 6 lines 6-31 and Figs. 7-11;

Art Unit: 2166

- "storing the forward increment" at Col. 3 line 55 to Col. 4 line 50 ;
- "storing the backward increment" Col. 6 lines 6-31 and Figs. 7-11;
- "storing the plurality of data writes" Col. 6 lines 6-31 and Figs. 7-11;
- "and updating the backup storage system so that the data on the data storage system at the second time is the same as the data on the backup storage system at the second time" at Col. 6 lines 6-31 and Figs. 7-11.

Conclusion

11. The prior art made of record, listed on form PTO-892, and not relied upon, if any, is considered pertinent to applicant's disclosure.

If a reference indicated as being mailed on PTO-FORM 892 has not been enclosed in this action, please contact Lisa Craney whose telephone number is **(571) 272-3574** for faster service.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh B. Pham whose telephone number is (571) 272-4116. The examiner can normally be reached on Monday through Friday 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 13, 2006

Khanh B. Pham
Primary Examiner
Art Unit 2166

A handwritten signature in black ink, appearing to read 'Kpham', with a long horizontal flourish extending to the right.